AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-20 (Cancelled).

21. (Previously Presented) A method of producing a peptide or protein expression library *in vitro* which displays a population of peptides or proteins, wherein the peptides or proteins are specifically associated with the DNA encoding them through covalent binding of the peptides or proteins to the encoding DNA, said method comprising at least the following steps:

1) preparing a genetic library of a population of DNA molecules, each DNA molecule comprising:

(a) a nucleotide sequence encoding a binding moiety comprising an amino acid sequence which is a *cis*-acting DNA binding protein which binds specifically to the DNA encoding sequence through covalent binding of the amino acid sequence to DNA, and

(b) a nucleotide sequence encoding a display moiety comprising an amino acid sequence for display, and wherein the display moiety comprises at least one site of attachment for the binding moiety, and

2) expressing the genetic library thus formed whereby the population of peptides or proteins is produced each specifically associated with the DNA encoding sequence through covalent binding.

22. (Previously Presented) The method as claimed in claim 21 wherein expression of the genetic library is performed *in vitro* in a cellular system with at least one copy of a single library member expressed per host cell or organism.

23. (Cancelled).

24. (Previously Presented) The method as claimed in claim 21 wherein expression of the genetic library is performed *in vitro*, and is cell-free expression.

25. (Previously Presented) The method as claimed in claim 21 wherein said *cis*-acting protein is the P2 A protein.

26. (Previously Presented) The method as claimed in claim 24 wherein said expression is performed in the presence of a mis-match oligonucleotide which hybridizes to the DNA adjacent to the attachment site on both sides but that does not hybridize to the attachment site.

27. (Previously Presented) The method as claimed in claim 21 wherein said amino acid sequence for display is up to 40 amino acid residues.

28. (Previously Presented) The method as claimed in claim 21 wherein said amino acid sequence for display is generated by, or comprises DNA fragments from, cloning.

29. (Previously Presented) A method as claimed in claim 21 wherein said binding moiety is P2A modified by replacement of tyrosine at amino acid position 450 with phenylalanine.

30-33 (Cancelled).

34. (Previously Presented) A method of identifying a specific target-binding peptide or protein, said method comprising:

a) contacting a peptide expression library produced according to the method of claim 21 with a target molecule,

b) selecting and isolating a library member that binds to said target molecule, and

c) isolating from said library member the peptide or protein that is bound to said target molecule.

35. (Previously Presented) The method as claimed in claim 34 further comprising isolating from said library member the DNA sequence encoding the peptide or protein that binds specifically to said target molecule.

36. (Previously Presented) A method of assaying for the presence of a target molecule in a sample, said method comprising

(a) contacting said sample with a molecular probe comprising

(i) a peptide or protein target-binding moiety that selectively binds to said target molecule, wherein said target-binding moiety is covalently bound to DNA encoding said target-binding moiety and

(ii) a reporter moiety

wherein said contacting is effected under conditions such that said target-binding moiety can bind target molecule present in said sample selectively; and

(b) detecting the presence of reporter moiety bound to said target-bound molecular probe.

37 and 38 (Cancelled).

39. (Previously Presented) The method according to claim 21, wherein said nucleic acid encoding said amino acid sequence for display is generated by amplification by PCR.

40. (Currently Amended) The method according to claim 21 wherein the cis-acting protein is ~~NX174~~ <u>ϕX174</u>.